What is claimed is:

1. A spinal fixation device for stabilizing the spine comprising:

a staple member having a top member of sufficient length to span the disc space between two adjacent vertebrae;

at least two projections depending downwardly from said top member, each of said projections capable of being inserted into one of said two adjacent vertebrae; and

coupling means for coupling said staple member to a spinal implant surgically implanted in the disc space between said two adjacent vertebrae.

2. The spinal fixation device of claim 1 in which each of said at least two projections has a distal end that is sharpened to facilitate insertion of said at least two projections into said two adjacent vertebrae.

3. The spinal fixation device of claim 1 in which each of said two projections has an eccentric inclined planed inner surface facing said spinal implant, said inclined planed inner surface forcing and compressing the bone of said adjacent vertebrae toward said spinal implant when said two projections are inserted into said adjacent vertebrae.

4. The spinal fixation device of claim 1 further including means for preventing outward excursion of said at least two projections once said projection is inserted into the vertebrae.

5. The spinal fixation device of claim 4 in which said means for preventing outward excursion comprises said at least two projections having a plurality of ratcheted and segmented portions.

6. The spinal fixation device of claim 5 in which each of said plurality of ratcheted and segmented portions have a diameter that increases in the direction away from the direction in which said at least two projections are inserted into said two adjacent

vertebrae.

7. The spinal fixation device of claim 1 further including interdigitating means for interdigitating said staple member with said spinal implant.

8. The spinal fixation device of claim 7 in which said interdigitating means comprises a central bar capable of interdigitating with a spinal implant having a depression on one end for receiving and mating said central bar.

9. The spinal fixation device of claim 7 in which said interdigitating means is capable of interdigitating more than one spinal implant surgically implanted in the same disc space between said two adjacent vertebrae.

10. The spinal fixation device of claim 9 in which said interdigitating means comprises an extension arm extending from said top member, said extension arm capable of interdigitating and coupling to a second spinal implant surgically implanted within said disc space adjacent to said spinal implant.

11. The spinal fixation device of claim 1 in which said coupling means for coupling said staple member to said spinal implant comprises a locking means for lockably securing said staple member to said spinal implant.

12. The spinal fixation device of claim 1 in which said top member has an upper surface and a lower surface, said upper surface including means for removably engaging a driving means for driving said staple member.

13. The spinal fixation device of claim 12 in which said means for removably engaging a driving means comprises at least one opening is said upper surface of said top member and at least one post

member extending from said driving means.

14. The spinal fixation device of claim 1 in which said top member has at least one edge that is radiused, said top member conforming to the external curvature of said adjacent vertebrae and having a smooth surface to prevent erosion of the vessels located adjacent to the spine.

15. The spinal fixation device of claim 1 in which at least a portion of said staple member is made of a resorbable material.

16. The spinal fixation device of claim 1 further comprising a bone fusion promoting material to facilitate the bone fusion process.

17. Instrumentation for use in surgery for inserting a spinal fixation device having a staple member with at least two projections, said staple member spanning the disc space between two adjacent vertebrae, said projections engaging said adjacent vertebrae, said staple member engaging a spinal implant implanted between said adjacent vertebrae and at least partially within said disc space, comprising:

a driving instrument for driving the spinal fixation device, said driving instrument having a central shaft terminating at one end to a bottom member and terminating at its other end to a top member;

said bottom member having a means for removably engaging the spinal fixation device; and

said top member having a surface capable of receiving a high impaction force applied thereto.

18. The instrumentation of claim 17 in which said means for removably engaging the spinal fixation device comprises of at least one post extending from said bottom member and in which said staple member has at least one depression for receiving said at least one

post.

19. The instrumentation of claim 17 in which said central shaft has a central hollow interior and at least one open end.

20. The instrumentation of claim 19 further including an alignment rod for aligning said spinal fixation device with respect to a spinal fusion implant having a threaded central opening at one end, said alignment rod having a threaded end for threadably engaging said threaded central opening, said alignment rod being insertable within said central hollow interior of said shaft.

21. The instrumentation of claim 20 in which said alignment rod includes a plurality of splines longitudinally oriented along said alignment rod.

22. The instrumentation of claim 18 in which said central shaft is hollow having an interior surface comprising a second plurality of splines corresponding and capable of interdigitating with said plurality of splines of said alignment rod.

23. The instrumentation of claim 17 including a drilling template instrument comprising:

a template having means for aligning said template with a spinal implant inserted within the disc space between two adjacent vertebrae of the spine, said template having guiding means for guiding a drilling instrument used to create insertion holes in the vertebrae; and

a handle for holding said template, said handle being attached to said template so as not to obstruct the line of sight of the surgeon and to provide access to means for guiding a drilling instrument to a drilling instrument.

24. A method for affixing a spinal fixation device having a staple comprising of a top member with a central aperture and a plurality

of downwardly depending projections, to the vertebrae adjacent to a spinal implant having an opening at one end and surgically implanted in the disc space between said vertebrae, comprising the steps of:

attaching to said spinal implant an alignment rod having an end portion capable of engaging the opening of the spinal fusion implant;

aligning said spinal fixation device with respect to said spinal implant by passing said alignment rod through the central aperture of said staple, each of said plurality of projections contacting perpendicularly one of the vertebrae adjacent to the spinal fusion implant;

engaging said alignment rod to a driving instrument having a central shaft with a hollow central chamber for receiving said alignment rod, said central shaft terminating at one end to a bottom member and terminating at its other end to a top member, said bottom member having a means for removably engaging the spinal fixation device, said top member having a flat outer surface for receiving a high impaction force applied thereto;

driving said spinal fixation device to insert said plurality of projections into the vertebrae with said driving instrument by applying an impaction force to said driving instrument;

disengaging said driving instrument from said alignment rod;

removing said alignment rod from the opening of the spinal fusion implant; and

fixing said spinal fixation device to the spinal fusion implant with means for lockably securing said spinal fixation device to the spinal fusion implant.

25. The method of claim 24 in which said alignment rod is finely splined along its longitudinal axis and said hollow chamber of said driving instrument being correspondingly splined for receiving and interdigitating said alignment rod.

26. The method of claim 24 further including the step of creating insertion holes into the vertebrae for receiving said plurality of projections therein prior to driving said plurality of projections into said vertebrae.

27. The method of claim 26 in which the step of creating insertion holes includes the use of a drilling template having means for aligning said drilling template with the spinal fusion implant and means for guiding a drill used to create the insertion holes.

28. A multi-segmental spinal alignment apparatus for aligning one or more segments of the spine, comprising:

(a) a plurality of spinal fixation devices for stabilizing the spine inserted into the vertebrae of the spine, each of said plurality of spinal devices comprising:

a staple member having a top member of sufficient length to span the disc space between two adjacent vertebrae;

at least two projections depending downwardly from said top member, each of said projections capable of being inserted into one of said two adjacent vertebrae;

coupling means for coupling said staple member to a spinal implant surgically implanted in the disc space between said two adjacent vertebrae;

(b) connecting means for connecting said plurality of spinal fixation devices;

(c) alignment means for aligning said plurality of spinal fixation devices; and

(d) a plurality of spinal implants surgically implanted in the disc spaces between a plurality of adjacent vertebrae, each said plurality of spinal implants having a receiving means for receiving said connecting means for connecting said plurality of spinal fixation devices.

29. The apparatus of claim 28 in which said alignment means comprises tensioning means for tensioning said connecting means for

connecting said plurality of spinal fixation devices to align segments of the spine.

30. The apparatus of claim 28 in which said connecting means comprises linking means for linking more than one connecting means, a plurality of post members each having a head portion and an end portion for coupling to said plurality of spinal implants, said head portion having means for engaging said linking means.

31. The apparatus of claim 30 in which each of said plurality of spinal implants has a means for receiving and said end portion of each of said plurality of post members.

32. The apparatus of claim 28 in which said at least two projections comprise multipronged projection blades, said multipronged projections blades having a width that is substantially equal to the width of said top member.

33. A spinal fixation device for stabilizing the spine comprising:

at least two projection members capable of being inserted into one of said two adjacent vertebrae;

a top member of sufficient length to span the disc space between two adjacent vertebrae, said top member having engagement means for engaging said at least two projection members; and

coupling means for coupling said top member to a spinal implant surgically implanted in the disc space between said two adjacent vertebrae.

34. The spinal fixation device of claim 33 in which said at least two projection members are threaded screws.

35. The spinal fixation device of claim 33 including locking means for lockable securing said projection members to said top member.

36. The spinal fixation device of claim 33 in which each of said

at least two projection members has a distal end that is sharpened to facilitate insertion of said at least two projection members into said two adjacent vertebrae.

37. The spinal fixation device of claim 33 in which each of said two projection members has an eccentric inclined planed inner surface facing said spinal implant, said inclined planed inner surface forcing and compressing the bone of said adjacent vertebrae toward said spinal implant when said two projection members are inserted into said adjacent vertebrae.

38. The spinal fixation device of claim 33 further including means for preventing outward excursion of said at least two projection members once each of said projection members is inserted into the vertebrae.

39. The spinal fixation device of claim 38 in which said means for preventing outward excursion comprises said at least two projections having a plurality of ratcheted and segmented portions.

40. The spinal fixation device of claim 39 in which each of said plurality of ratcheted and segmented portions have a diameter that increases in the direction away from the direction in which said at least two projections are inserted into said two adjacent vertebrae.

41. The spinal fixation device of claim 33 further including interdigitating means for interdigitating said top member with said spinal implant.

42. The spinal fixation device of claim 41 in which said interdigitating means comprises a central bar capable of interdigitating with a spinal implant having a depression on one end for receiving and mating said central bar.

43. The spinal fixation device of claim 41 in which said interdigitating means is capable of interdigitating more than one spinal implant surgically implanted in the same disc space between said two adjacent vertebrae.

44. The spinal fixation device of claim 43 in which said interdigitating means comprises an extension arm extending from said top member, said extension arm capable of interdigitating and coupling to a second spinal implant surgically implanted within said disc space adjacent to said spinal implant.

45. The spinal fixation device of claim 33 in which said coupling means for coupling said top member to said spinal implant comprises a locking means for lockably securing said top member to said spinal implant.

46. The spinal fixation device of claim 33 in which said top member has an upper surface and a lower surface, said upper surface including means for removably engaging a driving means for driving said staple member.

47. The spinal fixation device of claim 46 in which said means for removably engaging a driving means comprises at least one opening is said upper surface of said top member and at least one post member extending from said driving means.

48. The spinal fixation device of claim 33 in which said top member has at least one edge that is radiused, said top member conforming to the external curvature of said adjacent vertebrae and having a smooth surface to prevent erosion of the vessels located adjacent to the spine.

49. The spinal fixation device of claim 33 in which at least a portion of said top member is made of a resorbable material.

50. The spinal fixation device of claim 33 in which at least a portion of said at least two projection members is made of a resorbable material.

51. The spinal fixation device of claim 33 further comprising a bone fusion promoting material to facilitate the bone fusion process.

52. A method for stabilizing two adjacent vertebrae in a segment of the spine, comprising the steps of:

inserting a spinal implant between the two adjacent vertebrae;

inserting a staple member into said adjacent vertebrae; and

coupling said staple member to said spinal implant.

53. The method of claim 52 in which said staple comprises:

a top member of sufficient length to span the disc space between two adjacent vertebrae;

at least two projections depending downwardly from said top member, each of said projections capable of being inserted into one of said two adjacent vertebrae; and

coupling means for coupling said staple member to said spinal implant inserted between said two adjacent vertebrae.

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